

MOTOYAMA

Application No. 09/960,654

October 22, 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A low noise down converter for satellite broadcast receiving, comprising a mixer converting a received high-frequency signal into an intermediate-frequency signal,

said mixer including:

a transistor performing frequency conversion,

a PNP bipolar transistor having an emitter connected to a drain of said transistor and a collector connected to a gate of said transistor, and

a temperature characteristic compensating circuit connected to a base of said PNP bipolar transistor and canceling a temperature characteristic of said PNP bipolar transistor;

wherein said temperature characteristic compensating circuit

includes an NPN bipolar transistor having a conductive terminal connected to the base of said PNP bipolar transistor, and

said PNP and NPN bipolar transistors are packaged into a dual transistor.

2.-3. (canceled)

4. (new) A mixer comprising:

 a transistor performing frequency conversion of a received signal;

 a PNP bipolar transistor having an emitter connected to a drain of said transistor and a collector connected to a gate of said transistor; and

 a temperature characteristic compensating circuit for canceling a temperature characteristic of the PNP bipolar transistor, the temperature characteristic compensating circuit including an NPN bipolar transistor having a conductive terminal connected to a base of said PNP bipolar transistor;

 said PNP and NPN bipolar transistors being packaged into a dual transistor.